Case Study: Improving Mission Readiness via Job Performance Aids

10/26/2009

Research & Evaluation Team

research_eval@adlnet.gov

Introduction

Skill decay refers to the loss of trained knowledge and skills after periods of nonuse. It is particularly problematic in situations where individuals receive training on information that may not be used for extended periods of time. For example, reserve personnel in the military may only receive formal training once or twice a year. However, they are expected to require a limited amount of refresher training when they are called up for active duty before they are able to perform their mission effectively (Wisher, Sabol, Hillil, & Kern, 1991).

Prevalence of Skill Decay

Arthur and colleagues (1998) conducted a statistical summary of the literature in order to determine the extent to which skill decay occurs after training and factors that influence skill decay. After 28 to 90 days of nonuse of the trained information, trainees' performance declines by 23% on average. Furthermore, the extent of skill decay rapidly increases as the period of nonuse lengthens. After 365 days of nonuse, trainees' performance was 40% less, on average, than their post-training performance. The extent to which skill decay occurred was also influenced by the nature of the skill that was being taught and aspects of the training.

Overall, research findings suggest that it is unlikely that servicemembers can remain mission ready without frequent refresher training or tools that will spark their recall of trained knowledge and skills.

Combating Skill Decay with Job Performance Aids

The Defense Ammunition Center (DAC), Defense Acquisition University, and the U.S. Navy are just a few examples of military organizations within the Department of Defense that are availing trainees with job performance aids to enable them to access training material as needed. For example, DAC has developed the "Ammunition Multimedia Encyclopedia," which functions as a virtual encyclopedia on all information related to munitions. It can be both browsed and searched, and includes extensive information on different types of munitions and their use, presented with traditional text as well as 360 degree, multi-directional pictures of munitions, as well as demonstrative videos. The DAC Ammunition Multimedia Encyclopedia is available through the internet, making it possible for servicemembers to access information they need instantly and from anywhere in the world. There is also a portable digital assistant (PDA) version to enable mobile access to the encyclopedia.

Research and experience have shown that job performance aids are a cost-effective alternative or supplement to training (Campbell, 1996). Job aids inform employees when they need to utilize a given skill set and how to perform the specific steps for a given task, reducing the need for recall of trained information by providing real-time access to tutorials on critical work-related information. Ultimately, performance aids are beneficial because they combat the rapid skill decay that occurs after trainees acquire new information, enhancing mission readiness.

ADL technologies, such as the Sharable Content Object Reference Model (SCORM), enable performance aids to be accessed via the internet (on computers or on mobile devices such as cellphones or PDAs) anytime and anywhere, helping to prevent skill decay before it begins. SCORM encourages the development of training content in small, reuable sharable content objects (SCOs). SCOs can be repackaged quickly into brief tutorials that trainees can access anytime they need to refresh their memory of trained skills. By harnessing the power of learning and information technologies, ADL can help combat skill decay, cutting the costs of re-training and ensuring that servicemembers are mission ready.

References

Arthur, W., Jr., Bennett, W., Jr., Stanush, P. L., & McNelly, T. L. (1998). Factors that influence skill decay and retention: A quantitative review and analysis. *Human Performance, 11*, 57-101.

Campbell, C. P. (1996). Job performance aids. *Journal of European Industrial Training, 20*, 3-21.

Wisher, R. W., Sabol, M. A., Hillel, H., & Kern, R. P. (1991). Individual ready reserve (IRR) call-up: Skill decay (ARI Research Report No. 1595). Alexandria, VA: U.S. Army Research Institute.